

BOTANICAL MUSEUM LEAFLETS

HARVARD UNIVERSITY

CAMBRIDGE, MASSACHUSETTS, JUNE 29, 1970

VOL. 22, No. 10

ETHNOGYNECOLOGICAL NOTES IN THE HARVARD UNIVERSITY HERBARIA

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PLANTS used by primitive societies for the maintenance or restoration of health have drawn the attention of medical researchers in modern times. Those species which, however vaguely, have offered hope for relief from cancer, heart disease, mental illness and diverse metabolic disorders have aroused probably greatest interest up to the present. Among the plants which remain for the most part unexplored as to their pharmacological potentials are species which have been employed in connection with the functions and diseases of the reproductive tract of the human female. As a branch of ethnomedicine, this field might be called ethnogynecology. I use the term here to include, as well, ethnoobstetrics, embracing the practices surrounding pregnancy, labor and the puerperium in primitive cultures.

A number of species of plants previously little known for their involvement in ethnogynecology recently has been brought to light as the result of a large-scale search carried out during the last decade at Harvard University. This paper is one among several which have dealt with medicinal folklore in general,¹ with psychopharmacology,² with unusual food plants³ and with plants used to treat children's diseases,⁴ all based on data retrieved from the survey.

In 1962, Dr. Richard Evans Schultes and I set up a search for botanical folklore of potential interest to health and medical sciences.* Projects with this objective are not new. Ethnobotanical information has been gathered traditionally from both old and new writings in anthropology and botany, from archaeological materials and from field work. We believe that our project was unique in that it relied exclusively on mainly unpublished data from labels accompanying herbarium specimens. In five years, a sheet by sheet examination of over 2,500,000 specimens of flowering plants in the combined herbaria of the Arnold Arboretum and Gray Herbarium of Harvard University was completed. These specimens span a century and a half and are worldwide in representation. From these repositories the harvest amounted to nearly 7,000 notes from over 5,000 species. Materials ranging from magic to chemistry were recorded there, wherever was some hint of the presence of biodynamic agents. All species were checked in Uphof's *Dictionary of Economic Plants*⁵ in order to eliminate from our compilation already well known uses. One exception which was made to this procedure was in conserving any note which extended the geographic representation of a known use.

The search was undertaken in the belief that the major herbaria of the world represent untapped reservoirs of vital data. In some instances, they might provide the only remaining clues to the *materia medica* and nutritional

*The project was supported in turn by Smith, Kline and French Laboratories, the National Institute of Mental Health, and the Eli Lilly Research Laboratories. It was sponsored by the Botanical Museum of Harvard University. The author is indebted to Dr. Schultes for his encouragement and guidance. She is grateful also to Professors Richard A. Howard and Reed C. Rollins, Directors respectively of the Arnold Arboretum and Gray Herbarium of Harvard University, for their generous permission to use these two herbaria. This paper was presented on August 31, 1969, at the XI International Botanical Congress (under Ethnobotany), in Seattle, Washington.

patterns of peoples now extinct or whose cultures have been absorbed or destroyed by civilization. In other instances, they might serve to point out species which have not been used by man but which, on the basis of field observations, lead one to believe that they could be developed as economic plants. It was felt that the accelerating expansion of urbanization and forced constriction of natural areas make it urgent to gather and study all possibly useful species before living representatives in nature inadvertently are extinguished.

Out of the entire body of notes extracted from the herbarium search, about 100 notes fall within the class of ethnogynecology as defined above. These 100 or so notes represent as many field collections and nearly as many species. It is likely that many additional species from our notes are employed for the same purposes but are unrecognizable as such on the basis of the field notes alone. For example, in the newly completed index to our notes, there are over 400 species described only as "medicinal plants". There are almost 200 species which are reputed analgesics. Some 85 species are used for stomach disorders. Increasingly fewer numbers are employed as astringents; against abdominal spasms; as aphrodisiacs; for treating anemia; in baths; and as anti-convulsants.

Of the roughly 100 notes which are the concern of this paper, 38% have to do with the period after labor known as the puerperium. Twenty-one per cent relate to treatment of venereal disease, not always indicating, it must be acknowledged, whether for males or females. Eleven per cent deal with menstruation. Nine per cent refer to "female disorders". Eight per cent have to do with labor or childbirth. Another 8% relate directly to birth control. The remainder concerns galactagogues and plants used during the course of pregnancy. Needless

to say, some notes overlap more than one category.

Fifty families of flowering plants are represented among these notes. Thirty of these families have yielded one note each, which suggests a scattered distribution of ethnogynecological uses among the flowering plants. Twelve families produced two notes each. The *Boraginaceae* and *Labiatae* are represented each by three notes, the *Gramineae* by four, the *Liliaceae* five notes. The *Leguminosae* had six, *Euphorbiaceae* eight, *Compositae* 12 and *Rubiaceae* 13.

At least 35% of the plants are said to be eaten or, in some form, drunk. Sixteen per cent are made into decoctions or infusions, most of which probably are also orally administered. Fourteen per cent are employed externally, including in baths. Two per cent are inserted vaginally. Thirty-three per cent of the notes do not reveal the modes of employment.

Seventy per cent of the ethnogynecological notes indicate the parts of plants used. Roots are said to be used in nearly half of these notes. Leaves are designated in almost a third. The rest of the notes cite, in order of decreasing importance, barks, the entire plant, fruits, flowers and latex.

Of the 87 genera represented among these ethnogynecological notes, 33 are virtually unknown economically. Three quarters of the species are similarly unknown for economic purposes of any sort.

I should like to cite some of the field notes associated with species of economically obscure genera. As already stated, the largest group of ethnogynecological notes concerns the puerperium. In this category, sundry species can be cited from the Philippine Islands. For example, *Schizostachyum Lumampao* (C. O. Frake 567, *Gramineae*) and *Kadsura scandens* (C. O. Frake 578, *Schisandraceae*) are used as postpartem medicines. The

roots of *Knema glomerata* (C. O. Frake 569, *Myristicaceae*) and *Phytocrene Blancoi* (C. O. Frake 502, *Icacinaceae*) are boiled and drunk during puerperium. The roots of *Melicope monophylla* (C. O. Frake 674, *Rutaceae*) are pounded and drunk, while those of *Aphana* sp. (C. O. Frake 38140, *Icacinaceae*) are applied in some manner. The bark of *Neonauclea formicaria* (C. O. Frake 566, *Rubiaceae*) is boiled and drunk. The genus *Cyrtandra* (C. Cumingii, R. B. Fox 5052; *Cyrtandra* sp., M. D. Sulit 9974, *Gesneriaceae*) is used in association with bleeding following childbirth. A noteworthy claim is made for an indeterminate species of *Polyosma* (M. D. Sulit 3443, *Saxifragaceae*): "Decoction of roots given to women who gave birth—after delivery women can immediately walk—according to native".

From South America, one might cite *Tournefortia brevilobata* (W. H. Camp 2560, *Boraginaceae*): in Ecuador, "Infusions of lvs. drunk by women a day or two after childbirth to 'clean everything out'".

In association with the puerperium, one could include reputed galactagogues, such as *Epigynum Maingayi* (Ismail & Millard s.n.: K. L. No. 187, *Apocynaceae*) from Malaya. From Indochina, the following was reported for *Desmos Hancei* (Poilane 1184, *Annonaceae*): "... les Indigènes... emploient les rameaux et feuilles pour faire un breuvage qu'ils font prendre au femme après accouchement pour augmenter la sécrétion lactée, ils donnerait également des fruits comestibles".

The second largest group of ethnogynecological notes gathered relates to venereal disease. At least two species are represented from the Solomon Islands: *Faradaya* sp. (S. F. Kajewski 2543, *Verbenaceae*) "... in common with other vines is used for gonorrhea, the bark is macerated with water, the resulting concoction being drunk". *Cremastus sceptrum* (Williams & Assis 7343, *Bignonia-*

ceae) is supposed to be the source of a root-derived syrup “Good for syphilis”.

There are various examples from the New World: in El Salvador, *Campelia zanonía* (*P. C. Standley 19320, Commelinaceae*) is a “Remedy for gonorrhoea”. In Bolivia, *Pothomorphe peltata* (*J. Steinbach 5536, Piperaceae*) is used “. . . contra llagas sipiliticas”. Three species may be included from Mexico: *Mascagnia septentrionalis* (*G. Thurber 901, Malpighiaceae*) was used at least a century ago, the root being a putative specific against syphilis. A “remedy for gonorrhoea” comes from *Ageratum conyzoides* (*P. C. Standley 19220, Compositae*). The macerated leaves of *Hintonia latiflora* *G. B. Hinton Herb. No. 3413, 4317, Rubiaceae*) are taken internally for malaria and pinto. Pinto, or pinta, is the common name in Mexico for a form of treponematosi, an infection closely related to venereal syphilis.

In Africa, there is *Sabicea Vogelii* (*G. F. S. Elliot 4175, Rubiaceae*) “Used for gonorrhea by Natives. . .”

The third and fourth largest categories of ethnogynecological notes pertain to menstruation and “female disorders”, respectively. These notes deserve special attention. The plants in question apparently are *used* to treat what appear to be, for the most part, routine functional and minor ailments. But there is the possibility that at least some of these plants *act*, in fact, as regulators of reproductivity. As unrecognized birth control agents—for instance, as abortifacients or promoters of fertility—these species would be of considerable interest in connection with human population studies.

Plants in this category include *Polia thyrsifolia* (*C. Frake 491, Commelinaceae*) in the Philippine Islands: “Leaves applied for amenorrhea”.

In the West Indies, *Tournefortia volubilis* (*S. Kings 140, Boraginaceae*) is “Used for female trouble”. Here,

too, *Eleutherine bulbosa* (D. Taylor 30, *Iridaceae*) is “. . . used as a cure for irregular menstruation and menopause”. In Peru, *E. plicata* (F. Woytkowski 5744) produces bulbs from which a decoction is made for treating hemorrhages. *Bulbostylis capillaris* (W. A. Archer 4931, *Gramineae*) from Paraguay is “Sold by herb dealers in market at Asunción . . . as blood purifier in female disorders”. In El Salvador, *Polypremum procumbens* (Dr. A. Van Severen s.n., *Loganiaceae*) is believed to be a “Remedy for ‘metritis’ ”.

There are three Mexican *Compositae* of interest: *Haplopappus spinulosus* (Dr. Gregg 6) over a century ago was decocted for “. . . disorders of uterus detention of catamenia”. *Franseria ambrosioides* (H. S. Gentry 1336) was used as recently as 1935 for “female trouble”, the roots being cooked in water. In the same year, it was reported of *Viguiera montana* (H. S. Gentry 1288) that “Women put leaves on stomach to cause menses to flow, ‘por sale la sangre’ ”.

Perhaps of greater interest to students of fertility are those few species which are claimed directly to be able to control human reproduction. These species represent the sixth largest category of ethnogynecological notes. They are included at this point, out of sequence, because of their relationship with the two foregoing categories. One might cite here *Vochysia lomatophylla* (F. Woytkowski 6021, *Vochysiaceae*), collected in Peru in 1960: “. . . perhaps used by Campa tribe as contraceptive?”. In the *Compositae*, *Iostephane heterophylla* (H. S. Gentry 6349) was reported from Mexico in 1941 to have tuberous roots “. . . decocted for medicine; makes women fertile”.

The fifth largest category of ethnogynecological notes is made up of plants administered during labor, or in childbirth. To here, all examples cited have come from

genera scarcely known for their utility to man in any context. Those which follow represent genera which already enjoy economic standing of some sort but whose herein named uses are not widely known.

A number of examples is to be found from the Philippine Islands. An indeterminate species of *Loranthus* (*G. E. Edaño 1999, Loranthaceae*) bears leaves which are pounded in a mortar and applied to the stomach before childbirth. *Glochidion cauliflorum* (*M. D. Sulit 3297, Euphorbiaceae*) is used as follows: "Decoction of roots mixed with roots of cacao and coffee given to women for quick delivery". An "... infusion of the roots ..." of *Ocimum sanctum* (*G. E. Edaño 1618, Labiatae*) "... is given to mothers for childbirth". The use of *Ocimum* reminds one of recent work on *Nepeta Cataria*⁷ and *Salvia divinorum*,^{8,9} both also mints. The last two genera appear to contain psychopharmacological constituents. Is it possible that *Ocimum* may produce a similar intoxication and be used in primitive childbirth somewhat as the plant-derived hypnotic scopolamine has been employed in modern labor?

Two species in the *Leguminosae* might be cited from the Caroline Islands: *Pterocarpus indicus* (*C. C. Y. Wong 419*) produces leaves which are pounded to fine particles and applied for vaginal ruptures. Women "... express the leaves ..." of *Phaseolus adenanthus* (*C. C. Y. Wong 302*) "... and drink the sap for labor pains".

In Ecuador, *Heliotropium argenteum* (*F. Prieto 2555, Boraginaceae*) is employed to prepare an "Infusion of leaves given to women who have fits and spasms during childbirth". This genus has been recorded previously as possessing medicinal properties but not, to my knowledge, as an antispasmodic.⁵

The smallest category of ethnogynecological notes relates to pregnancy. It encompasses only two species,

from the *Gramineae*. *Pennisetum alopecuroides* (C. O. Frake 512) from the Philippine Islands has roots which are "... applied to stomach to reduce size in pregnancy (!)" *Cyperus brevifolius* (S. F. Kajewski 276) is used in the New Hebrides Islands, where it is macerated with other plants and drunk for good health during pregnancy.

I should not leave this subject without a word on aphrodisiacs. They have not been included among ethnogynecological notes. Possible aphrodisiacs number possibly fewer than 15 among all notes from the herbarium search. Perhaps the most intriguing entry is little known *Centropogon calycinus* (Y. Mexia 7701, *Campanulaceae*): in Ecuador, it is "Used as a love potion". *Mallotus Poilanei* (M. Poilane 26084, *Euphorbiaceae*) belongs to a medicinal genus⁵ but is reported from Indochina as having a "Racine tonique et aphrodisiaque". *Jatropha angusti* (J. West 3796, C. Vargas C. 408, *Euphorbiaceae*), also from a medicinal genus,⁵ is reputed to be an aphrodisiac in Peru. *Ptychopetalum olacoides* (G. Stahel 269, *Olacaceae*) is supposed in Surinam to act as an aphrodisiac; the species also is the source of Muira puama, employed in medicine.⁵

Among alleged love charms are species of the genera *Loranthus* (*Loranthaceae*), *Aristolochia* (*Aristolochiaceae*), *Canavalia* (*Leguminosae*), and *Premna* (*Verbenaceae*). Sundry common names suggest aphrodisiacal properties: among these I have included plants called "Love Bush", "Amor Seco" and "Matrimonio Viejo".

There is one antaphrodisiac: of *Davilla lacunosa* (L. O. Williams 5098a, *Dilleniaceae*) in Brazil, it is said: "Give tea to animals and they are impotent".

In conclusion, I want to say that species of plants associated with ethnogynecology warrant careful inspection by modern gynecological and obstetrical pharmacologists. I would emphasize further that, in considering

these species, one must also expand one's view of their possible usefulness beyond the purposes for which they are employed in the simplistic contexts of their ethnobotanical origins. Today we can cure venereal disease; we have anodynes for dysmenorrhea and synthetic opiates for labor. The major value of the notes referred to may lie in how they might bear incidentally upon such fields as cancer, heart, mental and metabolic research. It is in such a questioning posture that we hope to present these and all our materials to science in a forthcoming catalogue.

Today, not even ten years after our first thoughts on searching herbaria, we inevitably ask whether it is not imperative to attempt now—perhaps through the international cooperation of various scientists and governments—to preserve living examples of all extant species, including economic and presently non-economic plants. I take this opportunity to recommend that coordinated efforts to this end would be particularly fruitful in the so-called underdeveloped nations where, it so happens, one encounters the most promising of ethnobotanical raw materials, directly from the indigenous societies which give birth to their uses. If civilized man does not act now, he may leave his descendants irretrievable losses and, possibly, the undoing of his own species through want of some missing botanical essential to a future generation.

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